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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|-----------------|-------------|----------------------|---------------------|------------------|
|-----------------|-------------|----------------------|---------------------|------------------|

10/585,044

06/29/2006

Markus Kress

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03/25/2008

FRIEDRICH KUEFFNER

317 MADISON AVENUE, SUITE 910

NEW YORK, NY 10017

EXAMINER

LENNOX, NATALIE

ART UNIT

PAPER NUMBER

2626

MAIL DATE

DELIVERY MODE

03/25/2008

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

| | | | |
|------------------------------|--------------------------------------|--------------------------------------|--|
| Office Action Summary | Application No. 10/585,044 | Applicant(s) KRESS, MARKUS | |
| | Examiner NATALIE LENNOX | Art Unit 2626 | |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on June 29, 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-11 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-11 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 29 June 2006 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date <u>6/29/2006</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 112

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claims 1-10 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. The term "this kind" in claim 1 is a relative term which renders the claim indefinite. The term "kind" is not defined by the claim, the specification does not provide a standard for ascertaining the requisite degree, and one of ordinary skill in the art would not be reasonably apprised of the scope of the invention. The term "kind" might refer to the type of signal, which as mentioned in line 2 is an electrical signal, however it might also refer to a kind or type of utterance that might have been uttered with a specific emotion, for example, or even refer to the same type of phrase or word as in the person's utterance. The term "kind" is too vague. For purposes of examination, the term "kind" is interpreted as referring to an electrical signal derived from a particular utterance.

3. Claim 11 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Regarding claim 11, applicant claims "wherein the signals to be compared are used as blocks in a voice synthesis program." It is unclear what the applicant is referring to. Are the blocks referring to modules that are part of a voice

synthesis apparatus? If so, why are they claimed as part of a voice synthesis program?

Are the blocks referring to signals to be concatenated as segments for voice synthesis?

The subject matter which applicant claims as the invention is too broad and no specific description for it is given in the specification. For purposes of examination, examiner interprets the blocks as being modules in a voice synthesis apparatus.

Claims 2-10 incorporate the problem of claim 1 by dependency.

Specification

4. The specification is objected to as failing to provide proper antecedent basis for the claimed subject matter. See 37 CFR 1.75(d)(1) and MPEP § 608.01(o). Correction of the following is required: There is no support in the specification for the claimed subject matter of claim 11. The specification, in page 4, lines 7-8, cites that “the comparison signals may be blocks in a synthesis program for speech,” however this is the only mention of the signals as blocks and is not clear what the invention is or what applicant intends to claim. The idea of signals being represented as blocks is not widely known in the art and only suggests that the blocks are referring to modules as part of a diagram representing an apparatus.

5. The disclosure is objected to because of the following informalities: Page 5, line 23, refers to an averaging device 14, which is in connection to memory device 10. As shown in Fig. 1, reference number 14 corresponds to the audio signal and not to the averaging device, which is assumed corresponds to reference number 11.

Appropriate correction is required.

Drawings

6. The drawings are objected to under 37 CFR 1.83(a) because they fail to show labels relating to the function of each module as described in the specification. Any structural detail that is essential for a proper understanding of the disclosed invention should be shown in the drawing. MPEP § 608.02(d). Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as “amended.” If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either “Replacement Sheet” or “New Sheet” pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Objections

7. Claim 8 is objected to because of the following informalities: In claim 8, line 4, the word “an” is repeated. It seems as if the first “an” was meant to be “as,” but was incorrectly typed in. Appropriate correction is required.

Claim Rejections - 35 USC § 102

8. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

9. Claims 1 and 10 are rejected under 35 U.S.C. 102(b) as being anticipated by Lapere (US Patent 6,272,463).

As per claim 1, Lapere teaches a method for identifying people, in which a person is identified by comparing an electrical signal derived from a particular utterance by the person with a stored signal of this kind, wherein the signals to be compared are derived from a subphonemic range of the utterance (Fig. 3, more specifically steps 305, 307, 309, and 321. Also, Col. 7, lines 1-5).

As per claim 10, Lapere teaches the method as claimed in claim 1, wherein the method is integrated into a voice recognition program (Fig. 3 and Col. 7, lines 1-2).

Claim Rejections - 35 USC § 103

10. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

11. Claims 2-9 and 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lapere (US Patent 6,272,463) as applied to claim 1 above, and further in view of Peckham et al. (EP 0424071 A2).

As per claim 2, Lapere teaches the method as claimed in claim 1, but does not specifically mention wherein in a first step for deriving the signals an electrical output signal from an electro-acoustic transducer (1), which output signal corresponds to the entire utterance, is subjected to volume normalization.

However, Peckham et al. teach

wherein in a first step for deriving the signals an electrical output signal from an electro-acoustic transducer (1), which output signal corresponds to the entire utterance, is subjected to volume normalization (Page 5, lines 35-36, where the volume normalization is represented as the normalized energy for the analyzed utterance).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to have used the feature of wherein in a first step for deriving the signals an electrical output signal from an electro-acoustic transducer (1), which output signal corresponds to the entire utterance, is subjected to volume normalization as

taught by Peckham et al. for Lapere's method because Peckham et al. provides pitch analysis to permit pitch synchronous analysis (Page 5, lines 38-40).

As per claim 3, Lapere teaches the method as claimed in claim 1, but does not specifically mention wherein a Fourier series approximating an output signal corresponding to the entire utterance is formed.

However, Peckham et al. teach wherein a Fourier series approximating an output signal corresponding to the entire utterance is formed (Page 5, lines 32-35 and Page 9, lines 10-11).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to have used the feature of wherein a Fourier series approximating an output signal corresponding to the entire utterance is formed as taught by Peckham et al. for Lapere's method because Peckham et al. uses cepstral coefficients in order to create a highly effective speaker verification system (Page 5, lines 38-39).

As per claim 4, Lapere, as modified by Peckham et al., teach the method as claimed in claim 2. Lapere does not, but Peckham et al. does teach wherein to derive the signals which are to be compared at least one quasi-periodic range of the output signal is ascertained (Page 3, lines 27-31. The quasi-periodic range here is referred to as the analyzed pitch periods.).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to have used the feature of wherein to derive the signals which are

to be compared at least one quasi-periodic range of the output signal is ascertained as taught by Peckham et al. for Lapere's method because by controlling the timing of the analysis frame periods, it is possible to reduce inconsistencies of analysis which might otherwise arise due to the difference between the length of the analysis period and the length of the pitch period (Page 3, lines 31-33).

As per claim 5, Lapere, as modified by Peckham et al., teach the method as claimed in claim 4. Lapere does not, but Peckham et al. does teach wherein to derive the signals which are to be compared a single quasi-period or a plurality of quasi-periods is/are selected from the ascertained quasi-periodic range (Page 3, lines 27-31. The quasi-periodic range here is referred to as the analyzed pitch periods, and the quasi-period selected is the "timing of the frame periods" which is determined according to the analyzed pitch periods.).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to have used the feature of wherein to derive the signals which are to be compared a single quasi-period or a plurality of quasi-periods is/are selected from the ascertained quasi-periodic range as taught by Peckham et al. for Lapere's method because by controlling the timing of the analysis frame periods, it is possible to reduce inconsistencies of analysis which might otherwise arise due to the difference between the length of the analysis period and the length of the pitch period (Page 3, lines 31-33).

As per claim 6, Lapere, as modified by Peckham et al., teach the method as claimed in claim 5. Lapere does not, but Peckham et al. does teach wherein a quasi-period (n) determined in relation to its position in the quasi-periodic range (1 to m) is selected (Page 3, lines 27-31. The quasi-periodic range here is referred to as the analyzed pitch periods, and the quasi-period selected is the "timing of the frame periods" which is determined according to the analyzed pitch periods).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to have used the feature of wherein a quasi-period (n) determined in relation to its position in the quasi-periodic range (1 to m) is selected as taught by Peckham et al. for Lapere's method because by controlling the timing of the analysis frame periods, it is possible to reduce inconsistencies of analysis which might otherwise arise due to the difference between the length of the analysis period and the length of the pitch period (Page 3, lines 31-33).

As per claim 7, Lapere, as modified by Peckham et al., teach the method as claimed in claim 5. Lapere does not, but Peckham et al. does teach wherein the selected quasi-period is subjected to length normalization (Page 3, lines 29-33).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to have used the feature of wherein the selected quasi-period is subjected to length normalization as taught by Peckham et al. for Lapere's method because by controlling the timing of the analysis frame periods, it is possible to reduce

inconsistencies of analysis which might otherwise arise due to the difference between the length of the analysis period and the length of the pitch period (Page 3, lines 31-33).

As per claim 8, Lapere, as modified by Peckham et al., teach the method as claimed in claim 5. Lapere does not, but Peckham et al. does teach wherein a quotient signal is formed from the selected quasi-period and from a quasi-period which is influential an an average voice (Page 3, lines 29-36, and Page 14, lines 7-8).

It is noted that Peckham et al. does not specifically mention forming a quotient signal from the selected quasi-period and from a quasi-period which is influential as an average voice, however, it is well known in the art the use of similarity (or distance) measurements to determine how close two signals are from each other for classification, speech recognition, speaker identification, speaker verification, etc. Methods for similarity measurements such as root mean square distance, correlation functions, dynamic programming, and quotient determination, are well known in the art, which compare the result to a threshold or a predetermined number in order to make a determination. Peckham et al. uses dynamic programming for making this determination, however, it would have been obvious to a person having ordinary skill in the art at the time of the invention, to try any one of the known methods that yield predictable results with a reasonable expectation of success.

As per claim 9, Lapere teaches the method as claimed in claim 1, however Lapere does not specifically mention wherein to form comparison signals which are to

be stored the utterance is recorded a plurality of times at different pitches and, during identification, is interpolated between plurality of comparison signals, or interpolation is used to form a family of curves for comparison signals.

However, Peckham et al. teach

wherein to form comparison signals which are to be stored the utterance is recorded a plurality of times at different pitches and, during identification, is interpolated between plurality of comparison signals, or interpolation is used to form a family of curves for comparison signals (Page 3, lines 34-36, Fig. 8, Page 9, lines 45-54 and Page 13, lines 21-24. Also Fig. 12 and Page 14, lines 3-8 and 19-21.).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to have used the feature of wherein to form comparison signals which are to be stored the utterance is recorded a plurality of times at different pitches and, during identification, is interpolated between plurality of comparison signals, or interpolation is used to form a family of curves for comparison signals as taught by Peckham et al. for Lapere's method because by providing an utterance a plurality of times a refined model may be obtained which reduces or eliminates the effect of uncharacteristic utterances, and tends to improve the quality of the final reference template obtained by the speaker verification system (Page 10, lines 42-44) and therefore enhancing the accuracy of the comparison operations.

12. Claim 11 is rejected under 35 U.S.C. 103(a) as being unpatentable over Lapere (US Patent 6,272,463) as applied to claim 1 above, and further in view of Farrett (US Patent 5,325,462).

As per claim 11, Lapere teaches the method as claimed in claim 1, but does not specifically mention wherein the signals to be compared are used as blocks in a voice synthesis program.

However, Farrett teaches

wherein the signals to be compared are used as blocks in a voice synthesis program (see Claim 6).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to have used the feature of wherein the signals to be compared are used as blocks in a voice synthesis program as taught by Farrett for Lapere's method because Farrett employs formant analysis and modification to speech signals for improving the quality and perception of speech in a speech synthesis system (Col. 2, 50-53).

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to NATALIE LENNOX whose telephone number is (571)270-1649. The examiner can normally be reached on Monday to Friday 9:30 am - 7 pm (EST).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Richemond Dorvil can be reached on (571)272-7602. The fax phone

Art Unit: 2626

number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Richemond Dorvil/
Supervisory Patent Examiner, Art Unit 2626

NL 03/12/2008